Remarks/Arguments:

Claims 1-9 and 11-27 are pending in the application. Claims 1, 3, 4, 6, 7 and 13-22 are rejected. Applicants acknowledge with appreciation that claims 23-27 are allowed and that claims 2, 5, 8, 9, 11 and 12 would be allowable if rewritten into independent form. Claims 1, 2, 9, 13 and 18 have been amended. No new matter has been added.

On page 3, the Official Action rejects claim 13 under 35 U.S.C. 102(e) as being anticipated by Ketchum (US 2003/0185309).

On page 4 the Official Action rejects claims 14-19 under 35 U.S.C. 103(a) as being unpatentable over Ketchum in view of Doberstein (US 6,424,678).

On page 7 the Official Action rejects claim 20 under 35 U.S.C. 103(a) as being unpatentable over Ketchum in view of Doberstein, and further in view of Subramanian (US 5,361,276).

On page 7 the Official Action rejects claim 21 under 35 U.S.C. 103(a) as being unpatentable over Ketchum in view of Doberstein, and further in view of Bruekers (US 2002/0105907).

On page 8 the Official Action rejects claim 22 under 35 U.S.C. 103(a) as being unpatentable over Ketchum in view of Doberstein, Subramanian, and further in view of Bruekers.

On page 8, the Official Action rejects claims 1, 4 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Pautler (US 2003/0185309), Beloterkovsky (US 2003/0053571) and Huang (US 6,373,832).

On page 12, the Official Action rejects claims 3 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Pautler, Belotserkovsky, Huang and further in view of Wallace (US 2002/0193146).

It is respectfully submitted, however, that the claims are patentable over the art of record for at least the reasons set forth below.

Claim 1

Applicants' invention, as recited by claim 1, includes features which are neither disclosed nor suggested by the art of record, namely:

> **... selecting one set of the transmitting symbol vector ... based on each data symbol of the transmitting data ...**

Claim 1 relates to the selection of one set of transmitting symbol vectors. Specifically, one set of transmitting symbol vectors is selected based on a particular data symbol. Support for this feature can be at least found on pages 24-27 of the specification and furthermore, shown in Figs. 18A and 18B. No new matter has been added.

In paragraphs 89 and 91, Pautler suggests a code-book of a plurality of matrices that can be selected ("*code book of the matrices can be created and indexed*"). In paragraph 71 and 92-94, Pautler suggests that a column of the matrix is selected based on a stream of data ("*computes V, which is a matrix describing desired antenna array weight sets ... the column of the corresponding to the highest quality stream is selected first ... next a second column of V is selected ... if there are three data streams, the third column of V is selected from a subset of codebook entries*"). Thus, Pautler's selection of the columns of the V matrix is based on a plurality of data streams. Pautler, however, is not selecting the transmitting symbols based on each data symbol (Pautler selects the transmitting symbols based on the different streams.

Applicants' claim 1 is different than the art of record because one set of transmitting symbol vectors is selected based on each data symbol of the transmitting data ("*... selecting one set of the transmitting symbol vector based on each data symbol of the transmitting data ...*"). As shown in Applicants' Figs. 18A and 18B, one set of transmitting symbol vectors is chosen if the data symbol is a logic 1, and another one set of transmitting symbol vectors is selected if the data symbol is a logic 0. This selection process is furthermore described on pages 25 and 26 of Applicants' specification ("*in cases where only V1 is transmitting or V1 and V2 are vector multiplexed and transmitting simultaneously, the receiving signal is given*

by equation 4 as follows ... C1 denotes a symbol selection vector to be multiplied by V for selecting transmitting symbol vectors in this process ... similarly, in the case where only V2 is transmitting or where neither V1 nor V2 are transmitting, the receiving signal is given by mathematical formula 5 as follows ..."). Therefore, vector C0 and C1 on page 26 of Applicants' specification are responsible for selecting one set of the transmitting symbol vectors from the reference table based on the particular data symbol (based on whether the data symbol is a logic 1 of a logic 0). This feature is also supported on page 26 lines 20-25 of the specification ("*select VXC1 when the transmitting information is 1, and select VXC0 when the transmitting information is 0*").

Neither Pautler, Belotserkovsky, Huang, nor their combination suggest the features in Applicants' claim 1. Thus, independent claim 1 is patentable over the art of record for at least the reasons set forth above.

Claims 3, 4, 6 and 7

Claims 3, 4, 6 and 7 include all the features of claim 1 from which they depend. The combinations of i) Pautler, Belotserkovsky and Huang, and ii) Pautler, Belotserkovsky, Huang and Wallace are also deficient. Thus, claims 3, 4, 6 and 7 are also patentable over the art of record for at least the reasons set forth above.

Claims 13 and 18

Although not identical, independent claims 13 and 18 include features similar to those in independent claim 1. Neither Ketchum nor the combination of Ketchum and Doberstein suggest the features of amended claims 13 and 18. Thus, claims 13 and 18 are also patentable over the art of record for at least the reasons set forth above.

Claims 14-17 and 19-22

Claims 14-17 and 19-22 include all the features of claims 13 and 18 from which they depend. The combinations of i) Ketchum and Doberstein, ii) Ketchum, Doberstein and Subramanian, iii) Ketchum, Doberstein and Bruekers, and iv) Ketchum, Doberstein, Subramanian and Bruekers are also deficient. Thus, claims

14-17 and 19-22 are also patentable over the art of record for at least the reasons set forth above.

Claims 2, 5, 8, 9 and 11

Claims 2 and 9 have been amended into independent form to include the features of their base claims and any intervening claims. Thus, claims 2 and 9 are allowable. Claims 5, 8, 11 and 12 include all the features of allowable claims 2 and 9 from which they depend. Thus, claims 5, 8, 11 and 12 are also allowable.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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Dated: September 14, 2009

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